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ABSTRACT

The paper examines aspects of language (morphology, syntax, and semology) as they relate to effective instruction in the area of language with deaf students. Pointed out are language factors to keep in mind when preparing instructional materials for the deaf, such as words with more than one meaning and other problems affecting comprehension of a sentence. Explained is the language grid developed by Project LIFE to be used in identifying levels of linguistic competency as used with certain vocabulary, to assist the teacher in preparing language materials to supplement those developed by Project LIFE and in evaluating materials for utilization in the reading and language program. The language grid helps the teacher identify linguistic structures which the student understands. The structural matrix plus the listed vocabulary and concept usage listing provides the teacher with tools to evaluate the reading and language operational level of the student. The grid represents the sequential development of language principles and sentence patterns in the first eight units of the LIFE programed language filmstrips. (KW)

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CONSIDERATIONS IN THE EVALUATION OF LANGUAGE FOR INCLUSION IN A PROGRAMMED LANGUAGE SYSTEM FOR THE DEAF

A paper presented to the Summer Institute on programmed instruction

New Mexico State University

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My purpose here today is in a multi-dimensional sphere of philosophies and realisms associated with the determination of language - morphology, syntax, and semology/as it relates to effective instruction in the area of language in the universe of education of the deaf. Let me begin by saying, as Linus of Peanuts would say, "no problem is so big or so complicated that it can't be run away from." The empirical evidence of the past 150 years would indicate to me that many of us as educators of the hearing-impaired have really not attacked the whole area of language acquisition with the hearing-impaired. Lennenberg reports, that in written language, deaf children of 100 years ago were superior to those being graduated or terminated from the schools and programs of today. Of course there is always the argument to counter this which would point out that the deaf children today have a much higher proportion of students with pre-lingual dis-function.

Language is defined as a set of symbols, arbitrarily agreed upon, for communication of feelings, emotions, thoughts, ideas, and others. The outward manifestation of

language is in the form of writing, speaking, signing, finger spelling, reading, etc. Sapir defines language, "language is a purely human and non-instinctive method of communicating ideas, emotions, and desires by means of a system of volunarily produced symbols. These symbols are, in the first instance, auditory and they are produced by the so-called 'organs of speech'." What Sapir is saying is that these symbols were basically auditory. These were then transposed into other graphic forms of symbols such as pictorials, or the symbol system which we use as a sub-system, the alphabet. It is not our intention here to go into the rationale or concepts behind this definition and rationale, but rather to state a definition on which to build the rest of our discussion. It reminds me of the cartoon I saw of two cavemen outside of their indentation, one of the men involved in chiseling away at stone and completing this large circular item with a hole in the middle. The caption under the cartoon reads "I call it fire."

To further understand the language one must be aware of the different aspects of this totality of the system. One of the most frequent problems is the confusing of phonology with language. Phonology is the sound system of the language. It's application is to the common, agreed upon sounds which we will emit and receive for the purpose of communication. It is not the language. Phonology tells us that we have agreed to give a long open voiced sound to the letters ee.

The most important aspect of a language is its grammar. Grammar is the combination of syntax and morphology. Syntax is the word order and morphology is the word forms. In the sentences The farmer sees the sheep and The sheep see the farmer the meaning is determined by word order or syntax. In the sentences The sheep see the farmer and

The sheep sees the farmer there is a difference of the verb form; which results in a difference of meaning. This is the morphology or variations of the word forms. A morph is root which constitutes a word by itself. An affix is a morph which cannot stand alone; these include prefixes and suffixes. Suffixes can be divided into two classifications of derivations and inflections. Derivations are those suffixes which can be followed by other suffices. Inflections must always come at the end of a word to which they belong and may not be followed by other suffixes. In the word farmer there are three morphs: the root farm, the derivation-er and the inflection -s.

Another important aspect of the language is the semology or the meaning and vocabulary. Words change meaning frequently as a result of their usage within the sentence. Consider, for example, the word run. This word has more than two-hundred different meanings. The running horse; Running is fun; The run from Washington to Pittsburg; The boy runs; The fence runs around the house; Nixon will run; He hit a home run, etc. All of these sentences or phrases utilize the word run in a different meaning, and as different parts of the sentence. Children need to be exposed to all forms of a word before the word can become a total part of the child's working vocabulary.

The last part of a language which I will mention here are the interstiteals. These are the words which form the framework or skeleton of the language. They include the articles, conjunctions, prepositions and pronouns. In the Lorge-Thorndike count of 4,500,000 words 25 words account for 33%. The an, a represent 10% of the words. The an, to, of, I, in, was accounted for 20% of all words used. The thirteen most common words account for 25% of the total words. These words are the interstitutals.

In preparing instructional materials for the deaf the above items must be kept in mind. Let us examine the achievement in language and reading of 12,000 students across the United States in 1959. (Data taken from the Office of Demographic Studies, Gallaudet College, Washington, D.C., Academic Achievement of Deaf Students). These figures in the table represent the mean for each age group for each test battery. The analysis of the table reveals a minimal change from year to year within any test battery. Growth can be seen if one battery is compared to another battery. Thus, the indication is that grade level for the deaf as indicated on a Stanford Achievement test is indicative of change alone in the majority of cases. (All of the evidence for this statement is not presented here, but is available upon request).

THE LANGUAGE GRID - IDENTIFYING READING LEVELS

"My kids are seven years of age and I have been using a first grade reading text with them. They understand the vocabulary but for some reason they do not comprehend what is said in the materials. This makes it quite perplexing to me and I don't know what to do about it." The above statement and statements similar to it are frequently heard, especially from teachers of the deaf throughout the United States. Many times children have developed a vocabulary of five hundred to five thousand words and can match word to picture to show that they do understand vocabulary. The vocabulary is only one small phase of overall language competency. Vocabulary does have a direct and essential relationship to concepts and the conceptual process. Concepts are general ideas, discriminatory in nature, which must be symbolized to be effectively communicated. Concept development is a gradual process in which concepts develop from simple to complex mental constructs which are evoked and

Mean grade level of students with 60dB (ISO) or greater hearing loss. Academic Achievement Test Performance of Hearing Impaired Students U.S.: Spring 1969. Office of Demographic Studies, Gallaudet College, Washington, D.C.

Age	7	8	9	10	11	12	13	14	15	16	17	18	19
Reading													
Test Battery													
Primary I	1.65	1.87	1.91	1.97	2.04								
Primary II				2.38	2.50	2.41	2.51	2.44					
Intermediate I						3.41	3.46	3.33	3.33	3.35			
Intermediate II							3.97	4.31	4.24	4.17	4.02		
Language													
Primary II	2.98	3.17	2.99	3.04	2.87								
Intermediate I						3.42	3.54	3.41	3.40	3.48			
Intermediate II							4.13	4.66	4.50	4.57	4.40		
Advanced									5.46	5.82	6.02	6.15	6.00

labeled by signs which are most often words and which serve as guides for behavior. A well developed structure of concept associations is a function of vocabulary - concept relationships. Concepts are extremely difficult to evaluate, study, or even isolate and identify. (Langer) But even above and beyond the concepts and the vocabulary is the whole syntactic structure in which the vocabulary words are used to convey ideas. Let us assume for a minute a vocabulary of four words. These words are: the, man, guards, train. Let us now examine the different meanings and connotations these words can have when placed in different linguistic forms.

The man guards the train.

The train guards the man.

The guards man the train.

The man trains the guard.

The guard trains the man.

The basic words are probably readily identified by most children in the first or second grade. However, understanding the meanings of the five sentences would be something different. In each case three nouns serve as the subject, verb, and object. To say a child knows the word "man" would be hypocracy if the child did not understand the word "man" as it is used in the above sentences and in possible other such linguistic structures. The noun vocabulary used above changes its form class and by such, changes the entire meaning and usage. This leads to an important point, and that is, teachers should be aware

of the grammar of the language which is used in the instruction of the child. An excellent description of this grammar is found in Charles Thompson's book "The New English Grammar." (Thompson)

Many children in the schools for the deaf are "turned off" to language. This is an attitude which has been developed in them as a consequence of the events that have occurred in relation to the instruction. Mager lists some universal aversions which are: pain, fear and anxiety, frustration, humiliation and embarrassment, boredom, and physical discomfort (Mager). A consequence of the inability of a child to understand what is presented to him, or the consequence of incorrect assumptions can lead to a poor attitude through frustration and any one of the other aversions listed.

Positive attitudes can be achieved through practices which meet the child's needs. Some of these practices are: reinforcement and rewards, genuine delight on the part of the teacher and the student, increments of instruction leading to success, relating new information to old, immediate feedback and knowledge of results, interesting material and presentations, allowing for performance at the confident level, relevance and respect (Mager).

Project LIFE has undertaken to develop materials which would lead to a strong linguistic base for the language handicapped children and to prepare and present the materials in such a way as to develop a very positive attitude for learning. In providing assistance to the teacher in preparing additional materials and in evaluating materials for utilization in the reading and language program, Project LIFE has undertaken the development of

the "language grid" to be used in identifying levels of linguistic competency as used with certain vocabulary.

As in any instructional process the teacher should be cognizant of where she is going, from where is she starting, how do I know my children have the prerequisite behaviors, how do I know when they have reached my objective, and what shall I do in the interim to take the child from one point to the other? The area of reading and language; the "language grid" can serve the function of assisting the teacher in identifying linguistic structures of which the student understands. The structural matrix plus the listed vocabulary and "concept usage" listing can provide the teacher with the necessary tools to evaluate the reading and language operational level.

PROJECT LIFE LANGUAGE GRID
Units 1 - 8

The language grid represents the sequential development of language principles and sentence patterns in the first eight units of the programmed language filmstrips. Across the top of the grid, numbered I-IX, the sentence patterns are listed in developmental order. Down the left side of the grid, labeled A-M, are the listings of the language principles.

The grid can best be utilized when viewed with the listings of Behavioral Objectives, Vocabulary and Introduction of Concepts. Thus by studying the grid and the accompanying papers one can see what is taught in the LIFE programs and what things can be taught within the same structures.

The language principles, vocabulary, and sentence structures programmed in Project LIFE can be the basis for thousands of sentences and even more expansions of vocabulary within the structures.

Attached are the sequential listings of vocabulary for each of the language principles and examples of the sentence patterns from the language grid.

Sentence patterns with examples for the first eight language units of Project LIFE programmed materials.

Chart Listing	Pattern	Example
I	(n-d) N VI	The boy is running.
II	(n-d) adj N VI	The big boy is running.
III	(n-d) adj N c (n-d) adj N VI	The little boy and the big girl are sitting.
IV	(n-d) N^1 VT (n-d) N^2	Some boys ate the cookies.
V	Who VT (n-d) N^2	Who ate the cookies?
VI	(n-d) adj N LV adj	The big ball is green.
VII	What VI	What is sleeping?
	Who VI	Who is sleeping?
VIII	Who VT adj N^2 c adj N^2	Who has brown hair and blue eyes?
IX	(n-d) N^1 LV adv (adverb phrase)	The book is on the table.

Language concepts and vocabulary listings according to the unit and sections of Project LIFE programmed language materials in which they are introduced.

Language Concept	Vocubulary	Unit and Section in Which Introduced
NOUNS	boy	1-A
	girl	1-A
	man	1-A
	woman	1-A
	baby	1-A
	dog	2-A
	cat	2-A
	bird	2-C
	apple	3-B
	cookie	3-B
	meat	3-B
	water	3-C
	milk	3-C
	flower	4-A
	car (toy)	4-B
	ball	4-B
	doll	4-C
	balloon	4-C
	wagon	4-C
	airplane	4-C
	eyes	6-B
	nose	6-B
	hair	6-B
	ears	6-B
	mouth	6-B
	book	6-D
	kite	6-D
	boat (toy)	6-D
	pants	7-A
	shirt	7-A
	coat	7-A
	shoe	7-B
	cap	7-B
	dress	7-B

Language Concept	Vocabulary	Unit and Section in Which Introduced
	bed	8-A
	table	8-A
	chair	8-A
	basket	8-B
	box	8-B
	tree	8-B
	house	8-C
	bedroom	8-C
	bathroom	8-C
	room	8-C
	kitchen	8-C
	living room	8-C
	dining room	8-C
	sofa	8-D
	lamp	8-D
	sink	8-D
	stove	8-D
	bathtub	8-D
VERBS	is running	1-B
	is sleeping	1-B
	is walking	1-C
	is sitting	1-C
	are -------	1-E-F
	is /are flying	2-C
	is /are eating	3-A
	is /are drinking	3-A
	ate	3-D
	drank	3-D
	has (possession)	4-A
	have (possession)	4-A
	is (linking verb)	6-C
	are (linking verb)	6-C
	is /are jumping	8-A
NOUN DETERMINERS	the	1-B
	a	2-B
	some	2-B
DESCRIPTIVE ADJECTIVES	big	2-D
	little	2-D

(Over)

Language Concepts	Vocabulary	Unit and Section in Which Introduced
CARDINAL NUMBERS	one	4-B
	two	4-B
	three	4-B
COLORS	red	4-D
	green	4-D
	blue	4-D
	yellow	4-D
	black	4-E
	white	4-E
	blond	6-B
	brown	6-B
*DOUBLE VERB	is/are playing with	5-A
PRONOUNS	who	5-C
	what	5-C
	she	6-E
	he	6-E
	it	6-E
PREPOSITIONS	on	8-A
	under	8-A
	in	8-B

* There is not an agreement in the education of the deaf pertaining to double verbs. Some consider this a legitimate description and other people do not.

Sequence of Introduction		Words only	Phrase	I (n-d)N VI	II (n-d)adj N VI	III (n-d)adj N c (n-d)adj N VI	IV (n-d)N^1 VT (n-d) N^2	V who VT (n-d)N^1	VI (n-d)adj N LV adj	VII what VI who VI	VIII who VT adj N^2 c adj N^2	IX (n-d) N LVadv
Nouns	A											
Verb Present Progressive	B											
Noun Determiner Plural Nouns	C											
Descriptive Adjectives	D											
Verb Past Tense	E											
To have as Possession	F											
Cardinal Numbers	G											
Colors	H											
Double Verb	J											
Pronouns	K											
Possessive Nouns	L											
Prepositions	M											

n-d=noun determiner: N^1=subject: VI=intransitive verb: adj=adjective: c=conjunction (and): N^2=object: VT=transitive verb: adv=adverb phrase

THE CONSIDERATIONS

A. Child's language level

B. Objectives

1. X = B - A
   Where X is the material presented to the learner.

2. X - B = Entry behavior

C. Existing material availability

D. System analysis
   (How does B fit into the educational system)

E. Process analysis

F. Sequential process

		X Whose N^1 L V Adj. ?	XI What (be) N^1 V?	XII Where L V N^1?	XIII Do N^1 V (n-d) N^2 ? Does N^1 V (n-d) N^2?	XIV May N^1 V N^2 ?
Possessive Pronouns his, her	N					
Verb to be (Am) as Linking Verb	O					
Verb - Future Tense	P					
Interrogative Pronoun Whose ____?	Q					
Interrogative Pronoun What ____?	R					
Interrogative Where ____?	S					
Direct Discourse	T					
Imperative form of verb	U					
Negative form of verb - does not	V					
Interrogative form of Do and does	W					
Expressions Yes, No, Thank you, Please	X					
Time Breakfast time Lunch time	Y					
Interrogative May ____?	Z					